

ABSTRACT OF THE DISCLOSURE

A semiconductor-based tunable optical dispersion compensation method and apparatus for multiple channels. In one aspect of the present invention, an apparatus according to an embodiment of the present invention includes a semiconductor material. An optical path through the semiconductor material is included. The optical path is optically coupled to receive an optical beam. A nonlinearly chirped Bragg grating is disposed in the semiconductor material. The optical path includes the nonlinearly chirped Bragg grating to substantially reduce chromatic dispersion in the optical beam.